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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/972,019	10/05/2001	Myles H. Wakayama	47426/RJP/B600	3152

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EXAMINER

KINKEAD, ARNOLD M

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/972,019	WAKAYAMA, MYLES H.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Arnold M Kinkead	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**P r i d for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 August 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 24-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                              | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>03-12-03</u> | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 24-32, and 34-49 rejected under 35 U.S.C. 102(b) as being anticipated by Gersbach et al.(5,508,660 of record)

The reference by Gersbach et al discloses a CMOS charge pump that is part of a PLL loop(see figures 1 and 2). Figure 1 shows the PLL with detector(12) receiving input data, charge pump(14), and timing reference generator(18). In figure 2, first(H4) and second primary(H12) current sources are shown. The Gersbach et al reference meets the broad recitation for parallel current paths, the first path includes H4(first current source at first end), T2,T3,T7(second source at second end) the second path including H12(first current source),T1,T6 T8(second current source) and they have the same configuration(i.e. parallel) with corresponding feedback. The first output node for the first path include the point between H4,H17 which is also coupled to RC filter(on node 31). The output node for the second path is coupled between H12,H3 which is also coupled to node 31. The adjusting current source formed in part by (42,44). Also, a voltage difference being determined by the comparator op-amp with inherent trans-conductance (46) to minimize current offsets.

Art Unit: 2817

A first output node(31) and second output node(49) are shown. A filter(RC in general) is coupled to the first node and a LOOP capacitor C is shown in figure 4. A first output node(31) and second output node(49) are shown. A filter(RC in general) is coupled to the first node and a LOOP capacitor C is shown in figure 4. A feedback path is shown connected to reduce DC offset(note in col. 1, lines 48-60, The CMOS or transistors are part of the problem due to the channel length modulation, i.e. parasitics(capacitive), that lead to the offset) at charge pump output. The adjustment current being developed by way of T4,T5. The method steps being inherent.

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gersbach et al(US 5,508,660 cited by applicant).

The reference by Gersbach et al discloses a CMOS charge pump that is part of a PLL loop(see figures 1 and 2). Figure 1 shows the PLL with detector(12) receiving input data, charge pump(14), and timing reference generator(18). In figure 2, first(H4) and second primary(H12) current sources are shown. The Gersbach et al

Art Unit: 2817

reference meets the broad recitation for parallel current paths, the first path includes H4(first current source at first end), T2,T3,T7(second source at second end) the second path including H12(first current source),T1,T6 T8(second current source) and they have the same configuration(i.e. parallel) with corresponding feedback. The first output node for the first path include the point between H4,H17 which is also coupled to RC filter(on node 31). The output node for the second path is coupled between H12,H3 which is also coupled to node 31. The adjusting current source formed in part by (42,44). Also, a voltage difference being determined by the comparator op-amp with inherent transconductance (46) to minimize current offsets.

A first output node(31) and second output node(49) are shown. A filter(RC in general) is coupled to the first node and a LOOP capacitor C is shown in figure 4. A first output node(31) and second output node(49) are shown. A filter(RC in general) is coupled to the first node and a LOOP capacitor C is shown in figure 4. A feedback path is shown connected to reduce DC offset(note in col. 1, lines 48-60, The CMOS or transistors are part of the problem due to the channel length modulation, i.e. parasitics(capacitive), that lead to the offset) at charge pump output. The adjustment current being developed by way of T4,T5. The method steps being inherent.

The reference does not describe a particular RC filter configuration, however, a series RC in parallel with another resistor. This , however, is a conventional circuit used as a low pass filter for developing the VCO control signal, notoriously well known to one of ordinary skill in the art.

In light of the above it would have been obvious to one of ordinary skill in the art to have recognized that the general low pass filter of the Gersbach reference may be one of several notoriously well known configurations to allow for the control signal to be developed for the VCO as is conventional and well within the level of skill for one of ordinary skill in the art.

Art Unit: 2817

*Response to Arguments*

5. Applicant's arguments filed 08-12-03 have been fully considered but they are not persuasive. The examiner has considered applicant's remarks about the first and second current paths having respective first and second output nodes with a filter coupled to said first output node and a capacitor coupled to the second output node.

The Gersbach et al reference meets the broad recitation because it too has parallel current paths, the first path includes H4, T2, T3, T7 the second path including H12, T1, T6, T8 and they have the same configuration (i.e. parallel) with corresponding feedback. The first output node for the first path include the point between H4, H17 which is also coupled to RC filter (on node 31); the output node for the second path is coupled between H12, H3 which is also coupled to node 31.

With regards the capacitor, figure 4 shows such a "dump", capacitor coupled to second output nodes of T17, T14 each transistor has a separate output tied to the capacitor. (note in col. 1, lines 48-60, The CMOS technology or transistors are part of the problem due to the channel length modulation, i.e. parasitics, that lead to the offset) Also, the comparator (46) does determine a voltage difference that allows for the proper current mismatch to be resolved.

*Terminal Disclaimer*

6. The terminal disclaimer filed on 08-12-03 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of the earliest filed prior patent has been reviewed and is accepted. The terminal disclaimer has been recorded.

Art Unit: 2817

*Conclusion*

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold M Kinhead whose telephone number is 703-305-3486. The examiner can normally be reached on Mon-Fri, 8:30 am -5 pm.

*Note: after Jan 15, '04 (571-272-1763)*


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on 703-308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and ~~703-308-7724~~ for After Final communications. *571-273-1763 after Jan 15, 2004.*

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Application/Control Number: 09/972,019

Page 7

Art Unit: 2817

A handwritten signature in black ink, appearing to read 'A. M. Kinkead', written in a cursive style.

Arnold M Kinkead

Primary Examiner

Art Unit 2817

Arnold Kinkead

Nov. 14, 2003